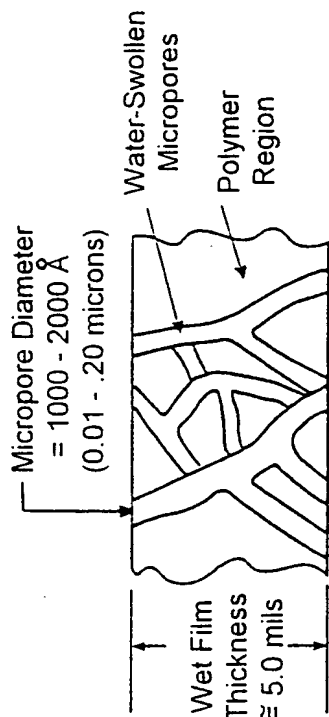
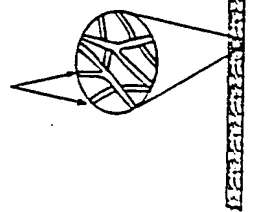


The Gas Permeability and Ionic Conductivity Properties of the Microcomposite Membrane will be Adjusted by Controlling the Concentration of Infiltrated Ion-Conducting Polymer and its Degree of Sulfonation



A. Water-Swollen Microporous Membrane

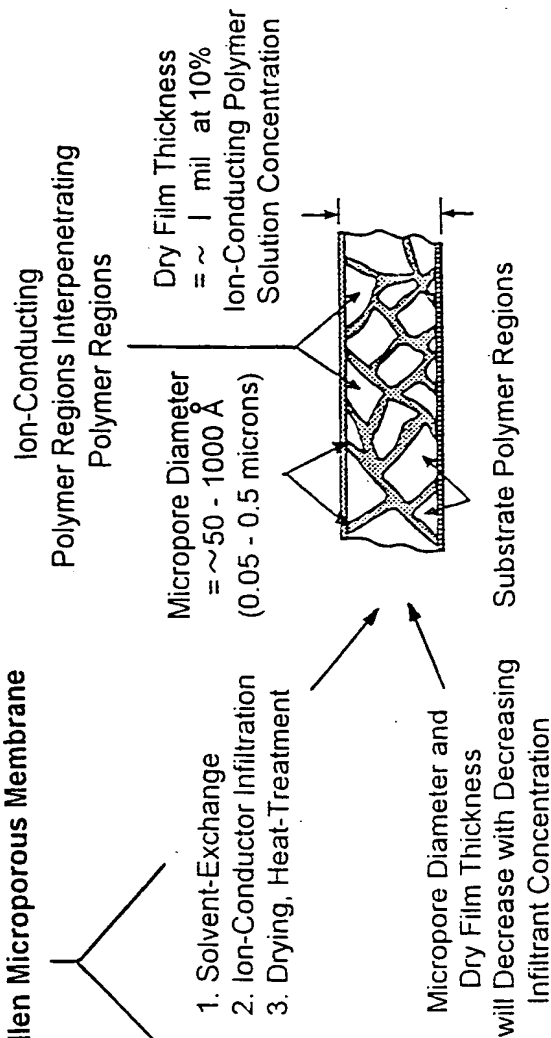
Micropore Diameter = $1 - 5 \text{ Å}$ (10^{-4} microns)



1. Drying
2. Heat-Treatment
3. Film Shrinkage through the Thickness

Membrane Dry Thickness $\approx 0.5 \text{ mil}$ at 0% Ion-Conductor

B. Dried, Heat-Treated, Substrate Membrane



C. Dried, Heat-Treated Microcomposite Membrane Containing ~ 50 Volume Percent Ion-Conducting Polymer

FIG. 1

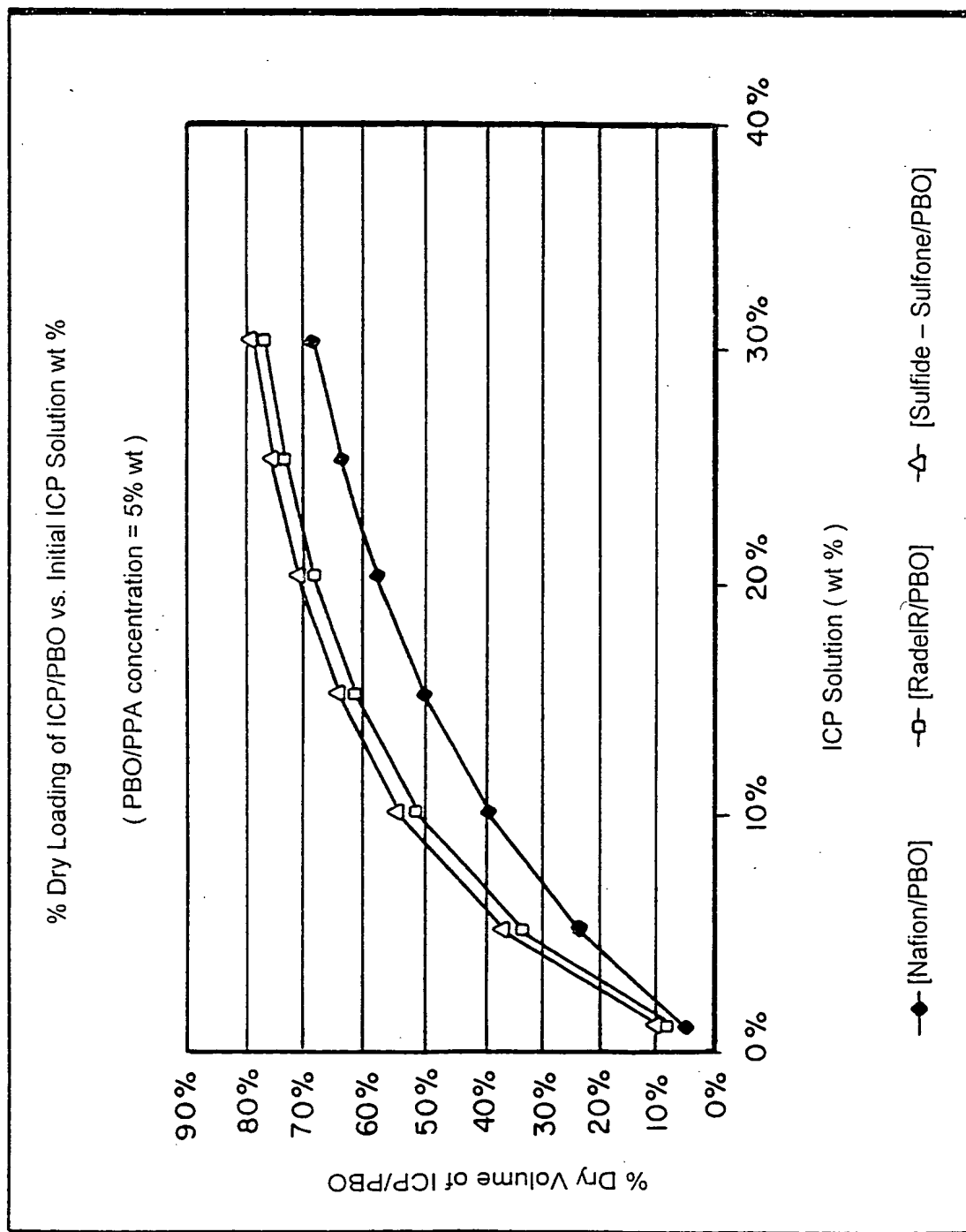


FIG. 2